PLANTERS RE-ORGANIZE

F. M. Swanzy Elected President of the New Association.

REPORTS READ AT THE MEETING.

Prof. Maxwell Tells About Fermentation of Sugars—Committees Named to Preserve Forests—End of an Interesting Session—Discussions—Etc.

After two days' session the Planters' Labor and Supply Company has passed out of existence and a new name substituted, under which much better results are hoped for. The new board of officers have assumed their respective duties. Much interest was manifested in the meeting just concluded, perhaps more than on previous occasions. The various reports read were full of matter germane to the cultivation and production of sugar

F. M. SWANZY, PRESIDENT HAWAIIAN SUGAR PLANTERS' ASSOCIATION.

and other commodities. From the tone of expressions made, it is evident the association intends to work in earnest and for the common good of all concerned.

As the Hawaiian Sugar Planters' Association, the new name of the body, much broader results are hoped to be obtained in all branches of the work carried on by the old association. The change has been under consideration for some time, but it has taken much labor to so perfect its organization that beneficial work may be carried out. The by-laws of the new association are lengthy and embrace all that is requisite for successful operation. Full reports of the meeting will be published later in the Planters' Monthly, official organ of the association. These will be read with interest by all those engaged in the production of sugar, and other adjuncts necessary to carry out that work.

The second and final day's session of the Planters' Labor and Supply Company opened at 9:30 a. m., Tuesday, with President Schaefer in the chair.

J. M Horner read a report on plantation transportation. Of late years mills, flumes, rails and tramways had been vastly improved over the products of previous years. This, of course, increased marvelously the yearly output of sugar. A wrought iron wagon was recommended for use in mountain districts. The report was accepted and recommended published in the Planters' Monthly.

Secretary Bolte read by-laws under which the reorganization of the company was asked Under these it is hoped to make the work more effective and broader than it was possible to do heretofore. The organization will hereafter be known as the Hawaiian Sugar Planters' Association, new officials having been named to carry out the provisions of the work

It was unanimously voted to elect the old board of trustees Then followed a lengthy and interesting paper on the effects of fertilization, prepared and read by Mr Morrison.

Professor Maxwell also read a treatise on the same subject, from which the appended are excerpts.

Fertilization, in its broadest and plainest meaning, includes the providing of the chemical elements of food by which plants live and grow, and of these mechanical conditions of the soil in which vegetation most easily thrives.

All soils contain materially smaller or greater amounts of all the elements upon which plants feed. Some soils possess these elements in such abundance and relative balance of proportion, and with a measure of availability, which at once constitutes them "good lands." These lands may be cropped for a considerable length of time, and without giving to them any plant food, before it is observed with certainty that they are losing strength. Again, other soils may possess the abundance of all necessary food constituents, but not in a state that the plants can use; or there may be no even balance in the relative amounts of the elements present, certain being in excess and others in actual want. Moreover, there can be a well-balanced supply of all substances required, and in a sufficient measure of chemical availability, but bad physical conditions, such as a too coarse or too close nature of the soil, and the excess or dearth of moisture, render the food supply inert. Now, where any of these conditions unsuited to fertility combine we find "poor lands."

Those lands, however, which originally possess all the elements which make crops in ample abundance, must give out with time. The most vital mineral elements of plant food are present in the soil in relatively small proportions. We have found the soils of the islands as a whole to contain about one-third of one per cent. of lime, potash, phosphoric acid and nitrogen respectively, and there are analyses which show that on an average, in each 100 tons of our soils, 16 tons, and in a few examples 28 tons, of *metallic* iron are contained. It is true that one-third of one per cent. of lime, or of the other three elements, in the soil would be ample for a vast number of crops of cane were it available. If these elements in the soil were available, however, what would be the end of a system of agriculture will continue to draw upon the soil and place nothing in return? Exhaustion must be the result! And such a system is one of *plunder*, and in set opposition to modes of fertilization which aim to maintain and increase the fertility of soils, not only by making good the substance which crops have taken out but by providing in greater amplitude the special elements of food that certain plants require.

In the report on soils, by way of explaining the reasons why in the beginning only partial analyses were being made it was stated that "the only elements of plant food which we purchase in fertilizers are nitrogen, phosphoric acid, potash and lime." Account is not taken of any other constituents which are found in the organisms of plants. Therefore our attention will be given to the four elements mentioned, and first in the order to *Nitrogen*. This element is of the greatest moment to the life and growth of plants. It is a constituent of the albuminoids, and these bodies compose in great measure the living protoplasmic fluid which is contained within and moves between the minute cells which form the interior structure of plants. At this place Professor Maxwell went into an exhaustive examination of the needs of the cane based upon the nature of the soils, which was explained in his report on soils to which attention was called yesterday. He shows that nitrogen is the "great want of our soils," and discusses that element as follows:

The source of the organic nitrogen present in soils is not only a question of scientific interest, it may be made to involve the further practical subject of green fertilization. The cane grows by the multiplying of the cells by which it is constructed, and as these cells grow and new ones are formed by aid of the nitrogenous fluid which exists and moves within them, nitrogen is indispensable to the economy of its organism, and probably the element most vital to its life.

The time of greatest growth, or cell production, is from the time of planting up to the period when the cane gives its attention more exclusively to making and storing up sugar in its cells; consequently it is at the beginning, and during the early part of its life, that the cane demands nitrogen. Sugar is composed exclusively of the elements carbon, hydrogen and oxygen; therefore in the making of sugar by the nitrogen does not directly play any part. As a matter of experience we know that excess of nitrogen prevents the formation of sugar, by prolonging the period of growth and preventing a normal maturity.

In our mauka virgin soils, the nitrogen content is found to be almost three times greater than in the low land virgin soils. The rainfall upon the average of the mauka lands, so far as the data in hand show, is not quite twice that of the makai lands. Rains bring down nitrogen in the forms of ammonia or nitric acid from the air into the soil, and this is a great source of available nitrogen. If however, the ammonia and nitrates contained in rain are the only source of nitrogen which plants make use of it is difficult to explain how it is that the nitrogen found in upper lands is even more than three times greater than that of the low lands, whilst the rainfall of the upper lands is not quite twice as much as that of the makai lands. Moreover, it has been shown in the report on soils that the waste of nitrogen from the upper lands is very notable by reason of the heavy rainfalls, much of which goes direct to the ocean, whilst there is still the smaller waste to be included which proceeds from surface vegetable decomposition. These considerations appear to suggest that, in addition to the nitrogen which has been taken up from the soil, by means of the greater vegetable activity upon the upper lands, caused by the greater rainfall, some free nitrogen has been taken from the air and used by vegetation. The grasses, weeds and trees upon the upper lands are not the kinds which experiments have shown to be great nitrogen gatherers; but this circumstance only suggests, further, that probably the abstraction of the free nitrogen from the air is a constant process of vegetation universally, but in most instances the amount of abstraction is so minute and the rate so slow that experiments, so far, have not detected it. At this time, however, we have no need to consider at length the secondary sources of nitrogen, all of which element I consider came orginally from the nitrogen of the atmosphere, as certainly does the element carbon; and we are interested in speaking of a few well known plants that are believed to be special gatherers of nitrogen from the air, and are valuable green fertilizers.

Professor Maxwell, at this point, gave some extremely interesting data showing the effect of sea spray upon the character of the cane, and then spoke of phosphoric acid as follows:

Phosphoric Acid.—Phosphorus, the vital element of this acid, is a constant constituent of vegetable organisms It is present in some kinds of albuminoids and invariably, in some proportion, in plant oils and fats. During the course o a long study of the functions of phosphorus in plant and animal life I found that the phosphorus present in the mineral form as phosphate passed into plants, where it was chiefly found in the composition of the vegetable fats. Further, in the hen's egg, where these phosphoric fats are present in large amounts, the phosphorus, during the hatching of the egg went out of the fats and back again to bone phosphate, where it was found in the bones of the chicken These movements of the element indicate to us how vital it may be to growth, and we, perhaps, shall not fully appreciate the value of the phosphoric acid in fertilization until we better understand the physiological character of its action. I fully believe this. In concluding the report on fertilization, Professor Maxwell referred to the business features of the subject as follows:

In the selection and purchase of the great elements of fertilization that have been considered there are certain purely economic or commercial considerations to which a word requires to be given. Nitrogen, phosphoric acid and potash, like sugar or iron, have definitely understood market values, which depend upon the compounds in which these elements are present. For example, nitrogen, per pound may be said to be most valuable as ammonia sulphate, next as nitrate, and very variable in the different organic manures. When a fertilizer is purchased the amounts of these elements should be determined and the data taken to calculate the chemical value. It is strictly necessary, however, that the formation which these elements are contained in a mixed fertilizer should be stated in order to assess its value, and enable us to say the soils and climatic conditions in which it should be used. The examination our "soils" has shown us that fertilizers *must* be applied; and our present introductory considerations on "fertilizations" indicate to what extent the mode of application is controlled by the season, location and climatic conditions.

The following new officers were named by the board of trustees and declared elected:

President, F M. Swanzy.
Vice President, Jno. F. Hackfeld.
Secretary, C. Bolte.
Treasurer, P. C. Jones.

AFTERNOON SESSION.

F. M. Swanzy, the new president, occupied the chair at the afternoon session Tuesday. Most of the time was consumed in hearing reports on various subjects of interest to the association and on which committees had been appointed. Commissioner Marsden told of what had been done in the matter of preserving the forests, touched on numerous needs in that line and otherwise furnished valuable and interesting data. His report was listened to with marked attention on the part of the members, and at the conclusion of his paper loud applause was given. Lack of space prevents a more full account of the commissioner's paper.

In commenting on the suggestions enumerated in Commissioner Marsden's report, Mr. Schaefer said he felt sure the Government took great interest in the matter of preserving the forests. President Dole had inquired into the matter when on his visit to Hawaii. The chief executive had informed him that the Government was willing to appoint a commission to deal with the subject. The speaker referred to sections on the big island that had been fenced and improved, much of the work having been done by private capital. Unless some steps were taken in the near future, much damage would result to several districts on the island of Hawaii.

Several gentlemen made remarks touching the matter under discussion, the consensus of opinion showing that some action must be taken in the premises, and that, too, as soon as possible. President Swanzy thought the Government made a mistake in leasing mauka lands for raising coffee. In order to raise coffee the growers were compelled to clear the forests; the timber lands were valuable to sugar raisers as windbreaks. He favored asking the Government to be more careful in issuing leases for coffee culture.

By request Prof. Maxwell spoke of a recent visit made to Hamakua, Kohala and Hilo districts. He was very much surprised to find so much dead timber rotting on the ground; the sight was something awful in his estimation. Investigation proved that the rainfall had materially decreased, mainly on account of the forests being denuded; cattle had been a chief factor in destroying both the timber and undergrowth. Water was the chief fertilizer of these islands, and unless care was taken in preserving the supply, serious results would follow the production of cane. He considered Hilo the most important water point of the islands.

W. M. Giffard believed it expedient that committees be appointed in the several districts, whose duties should be to look into the water supply and preservation of forests.

FERMENTATION OF SUGARS.

As a result of Prof. Maxwell's trip to the sugar plantations a most careful and complete report on fermentation of sugars had been prepared, which was read by the director. In order to collect information bearing on the subject a series of questions was prepared and delivered to the various agents, who sent copies to each of the plantations from which depreciated sugars had been received, which, with the professor's observations, enabled a conclusive statement to be made upon the subject. Prof. Maxwell's paper dwelt upon the depreciated polariscope tests, which was mainly caused by fermentation. He described the various mills visited by him and gave the causes of the depreciation much attention. Comparing the tests made at the plantations and at San Francisco a considerable difference was noticeable, chiefly in sugars of No. 1 grade. Reference was made to other grades, showing gains and losses by reboiling, etc

Discussion of Prof. Maxwell's paper brought out many facts and theories regarding the manufacture of various grades of sugar. Chemist Crawley made a few remarks about the methods employed in Louisiana and at other places, which showed plainly that the gentleman had had much valuable experience in that branch of sugar-making. He thought a proper solution of the question of fermentation had been reached in the South by use of soap and water It was the custom there to whitewash the mills inside and out after the season's work had been completed.

President Swanzy made a few remarks concerning the launching of the new organization, thanked those present for their attendance, and expressed the hope that much benefit would result from the meeting just concluded.

Before adjournment, however, a motion by Commissioner Marsden to have committees appointed in the several districts of the islands, to report on forest preservation at the next meeting, prevailed, after which the session closed with a vote of thanks to the retiring officers for valuable assistance rendered the association.

At the age of 80 Sir Henry Parkes, ex-Prime Minister of New South Wales, marries Miss Julia Lynch.

Notice of Registration of Label and Trade Mark.

HAVING SECURED FROM THE MINISTER of the Interior, under the laws of the Hawaiian Islands, a Certificate of Registration of Label and Trade Mark, as now used by us,

Notice is hereby given that the Honolulu Soap Works Company will prosecute in the Courts of the Republic all persons or firms selling soap in the Hawaiian Islands under the Label or Trade Mark of the Company or under the name of "Honolulu Soap" or "Hawaiian Soap," except soap of our manufacture.

HONOLULU SOAP WORKS COMPANY, LIMITED.
F. W. McCHESNEY,
President.
Honolulu, November 4th, 1895.
4160 1711-3t

Assignee's Notice.

THE UNDERSIGNED HAVING BEEN duly appointed assignee in bankruptcy of the estate of S Kasamatsu, notice is hereby given to all persons to present immediately their claims against the Pacific Trading Company of Honolulu and Sunrise Store of Honomu, duly authenticated, to the undersigned at the office of Messrs. H. Hackfeld and all persons indebted to said estate are hereby requested to make immediate payment to the undersidned.

C. BOSSE,
Assignee, Estate of S. Kasamatsu.
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